

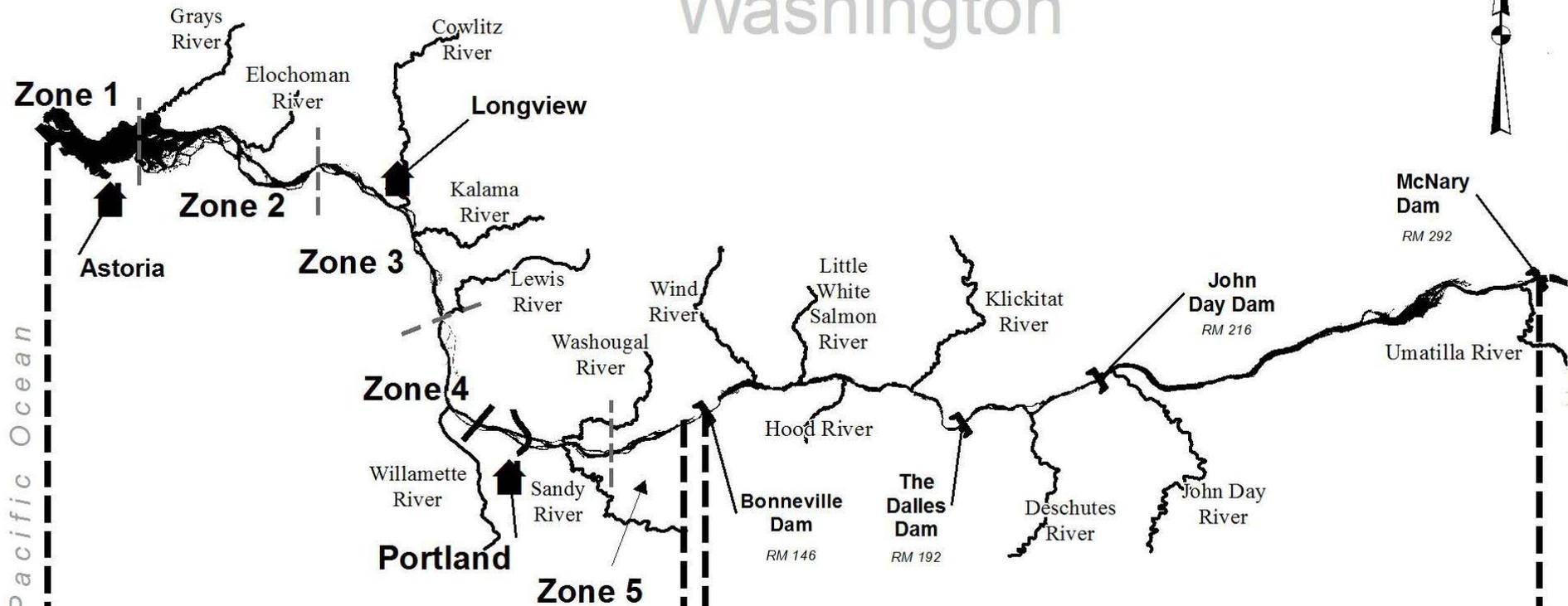
A genetic analysis of the Summer Steelhead stock composition in the Columbia River sport and treaty fisheries 2011 - 2013

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Contributors and Cooperators

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- Eagle Genetics Lab, Idaho Department of Fish and Game
- Hagerman Genetics Lab, Columbia River Inter-Tribal Fish Commission
- And most importantly all the technicians that collected and analyzed the samples

Washington



Pacific Ocean

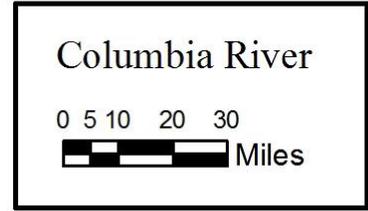
Zone 1 - 5
Non-Indian Fishery

~ 140 Miles Open to Commercial Fishing

Zone 6
Treaty Indian Fishery

~ 140 Miles Open to Commercial Fishing

Oregon



Steelhead CWT recoveries from Columbia River fisheries

Year	Dworshak	EF Salmon	Oxbow	Pahsimeroi	Sawtooth	Upper Salmon	Total
<u>Sport-downstream of Bonneville Dam</u>							
2006	7	0	2	2	0	0	11
2007	5	0	5	21	14	0	45
2008	4	0	2	19	6	1	32
2009	4	0	25	45	15	0	89
2010	19	1	30	35	26	3	114
Avg	8	0	13	24	12	1	58
<u>Zone 6 - Tribal</u>							
2006	101	0	0	2	0	0	103
2007	81	2	6	42	35	2	168
2008	186	0	4	17	13	8	228
2009	28	0	13	50	25	5	121
2010	142	20	23	28	31	7	251
Avg	108	4	9	28	21	4	174

PBT Tagrate of Steelhead Hatchery Release Groups

Hatchery Stock--program	Release group	MY10	MY11	MY12	MY13	Average Tagrate
		BY08	BY09	BY10	BY11	
Dworshak	Dworshak	67.5%	97.8%	98.3%	98.5%	90.5%
SF Clearwater	SF Clearwater	na	na	100.0%	85.7%	92.9%
EF Salmon - spawned at Sawtooth	EF Salmon	96.2%	100.0%	100.0%	100.0%	99.0%
Imnaha	Imnaha	100.0%	100.0%	88.4%	100.0%	97.1%
Lyons Ferry	Lyons Ferry	NS	99.1%	100.0%	100.0%	99.7%
Oxbow	Oxbow	90.9%	87.5%	91.2%	92.0%	90.4%
Pahsimeroi - general production	Pahsimeroi	94.1%	94.8%	97.0%	79.4%	91.3%
Pahsimeroi - SBT Beaver Creek egg box	SBT_Beaver	na	na	na	79.8%	79.8%
Pahsimeroi - SBT Indian Creek egg box	SBT_Indian	na	91.1%	95.2%	81.0%	89.1%
Pahsimeroi - SBT Panther Creek egg	SBT_Panther	na	95.4%	96.2%	na	95.8%
Pahsimeroi - SBT programs	SBT_Pah	99.4%	na	81.3%	na	90.3%
Sawtooth - general production	Sawtooth	99.3%	100.0%	99.8%	99.7%	99.7%
Sawtooth - SBT Basin Creek egg box	SBT_Basin	100.0%	98.3%	na	na	99.2%
Sawtooth - SBT Yankee Fork egg box	SBT_YF_Egg	100.0%	na	100.0%	100.0%	100.0%
Sawtooth - SBT Yankee Fork smolt	SBT_Yankee	91.4%	100.0%	100.0%	99.0%	97.6%
Touchet endemic	Touchet	NS	88.9%	64.3%	100.0%	84.4%
Tucannon endemic	Tucannon	NS	87.5%	69.4%	68.6%	75.2%
Upper Salmon	Upper Salmon	100.0%	100.0%	94.7%	100.0%	98.7%
Wallowa - Cottonwood release	Cottonwood	96.5%	95.8%	100.0%	96.0%	97.1%
Wallowa	Wallowa	NS	90.9%	97.6%	98.3%	95.6%

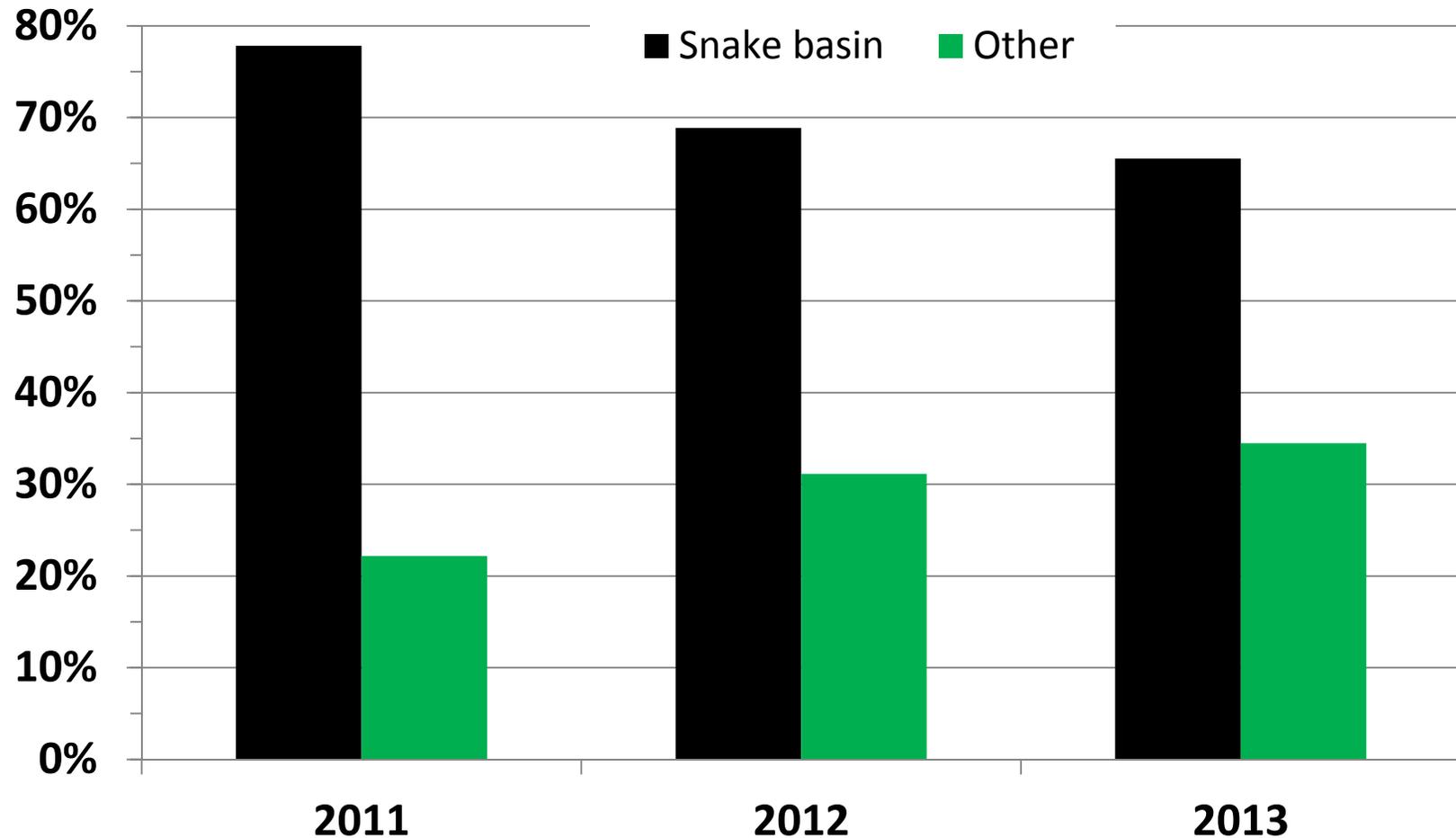
Lower Columbia River Sport



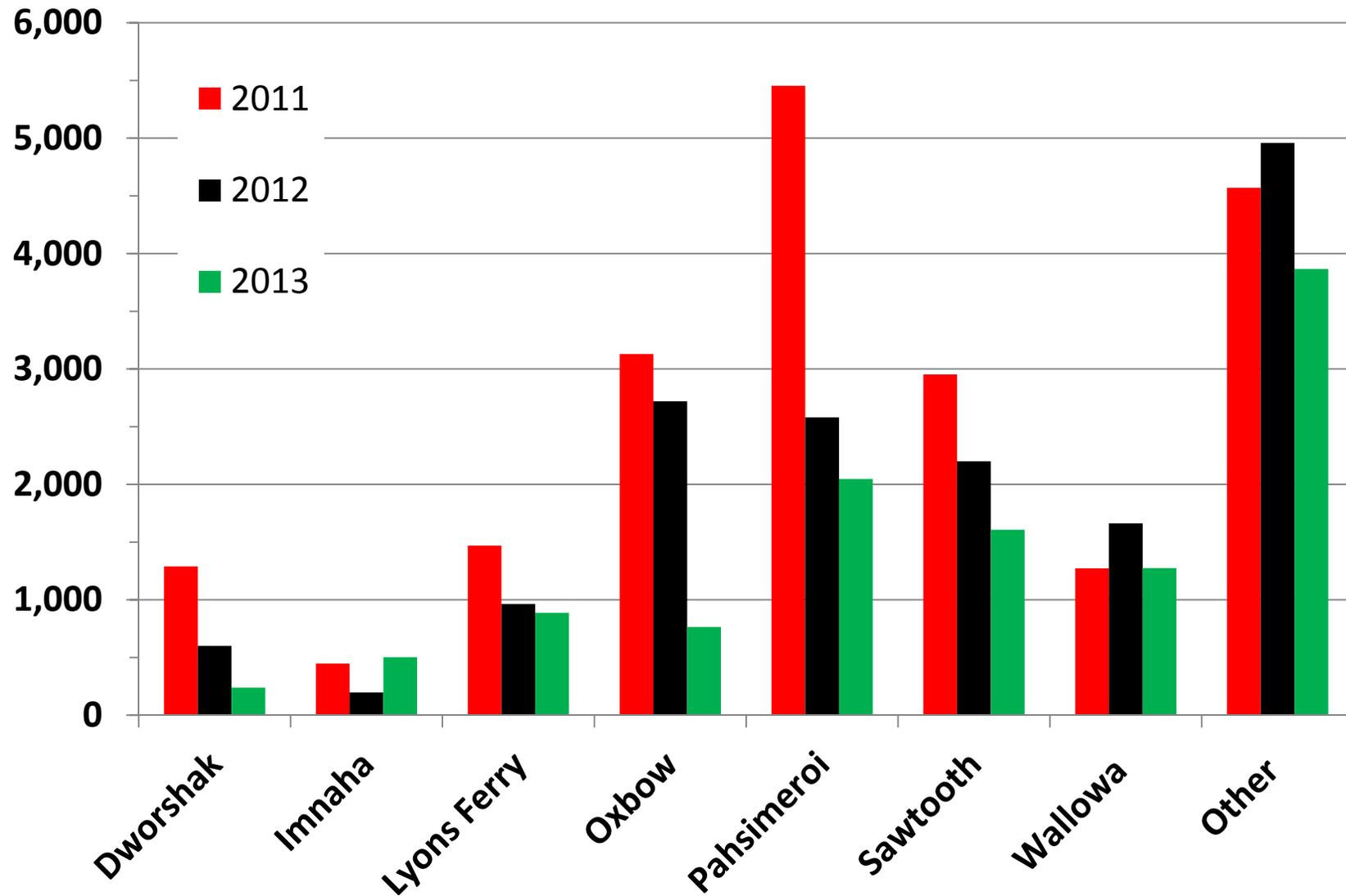
Sport fisheries sampled

- **Lower Columbia River: 2011 - 2014**
- Downstream of Bonneville Dam
 - Adipose clipped retention only
 - Most Steelhead harvested in July and August
 - Anglers switch to Fall Chinook once they arrive
 - Steelhead retention not allowed in Commercial fisheries
 - Harvest estimated monthly from creel surveys
 - sampled from June 16 to October 31
- **Columbia River Zone 6: 2012 - 2014**
 - Bonneville Dam to McNary Dam
- **Snake River: 2012 - 2014**
 - Mouth to Idaho/Washington border

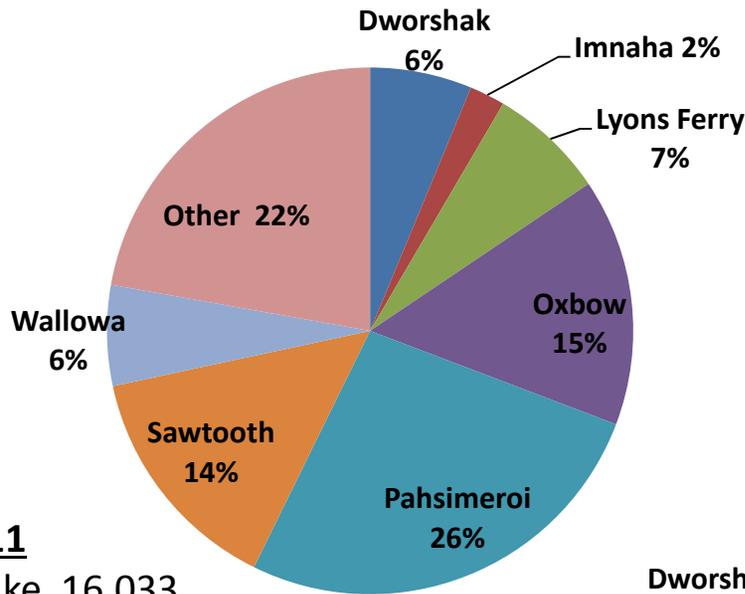
Snake River basin hatchery contribution in the lower Columbia River summer Steelhead sport fishery



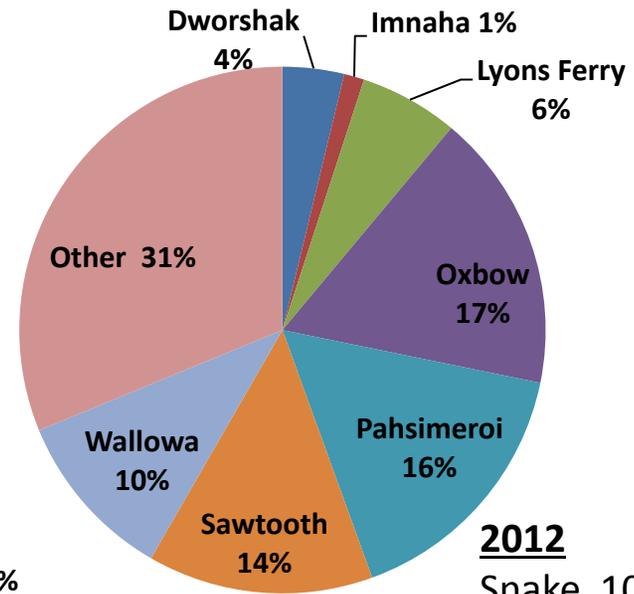
Harvest of Snake River basin hatchery stocks in lower Columbia River summer Steelhead sport fishery



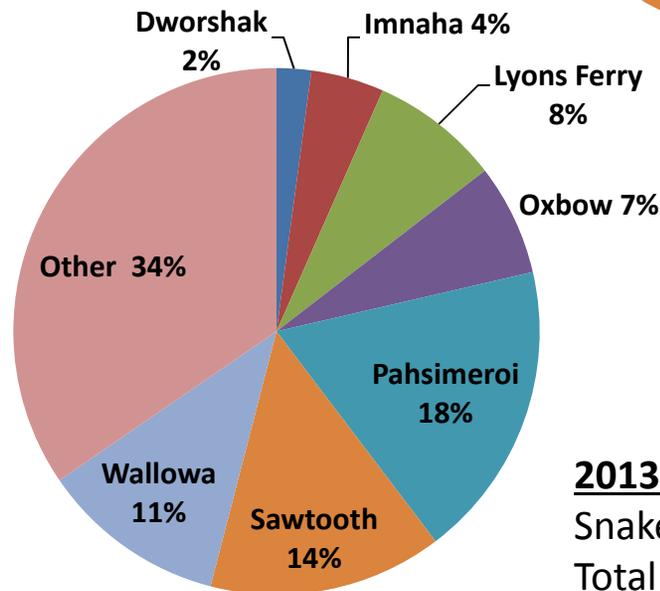
Lower Columbia River Sport – summer Steelhead stock composition



2011
Snake 16,033
Total 20,602



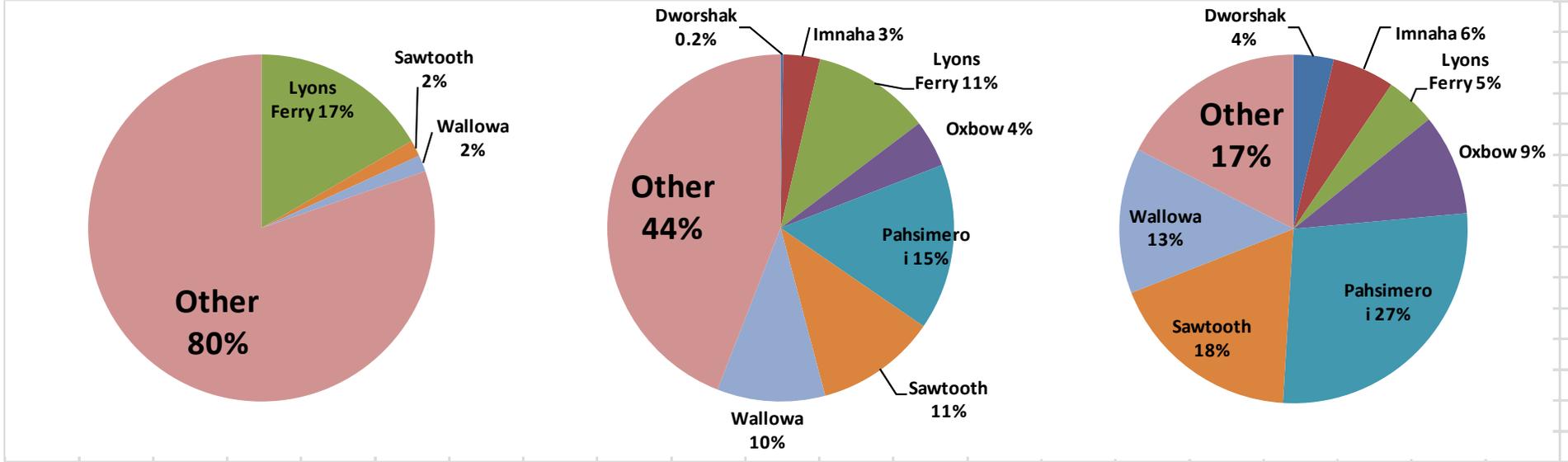
2012
Snake 10,965
Total 15,923



2013
Snake 7,346
Total 11,212

Lower Columbia River Steelhead Sport – 2013

stock composition by time



June 16 – 30
Harvest = 853

July 1 – 31
Harvest = 4,218

August 1 – October 31
Harvest = 6,140



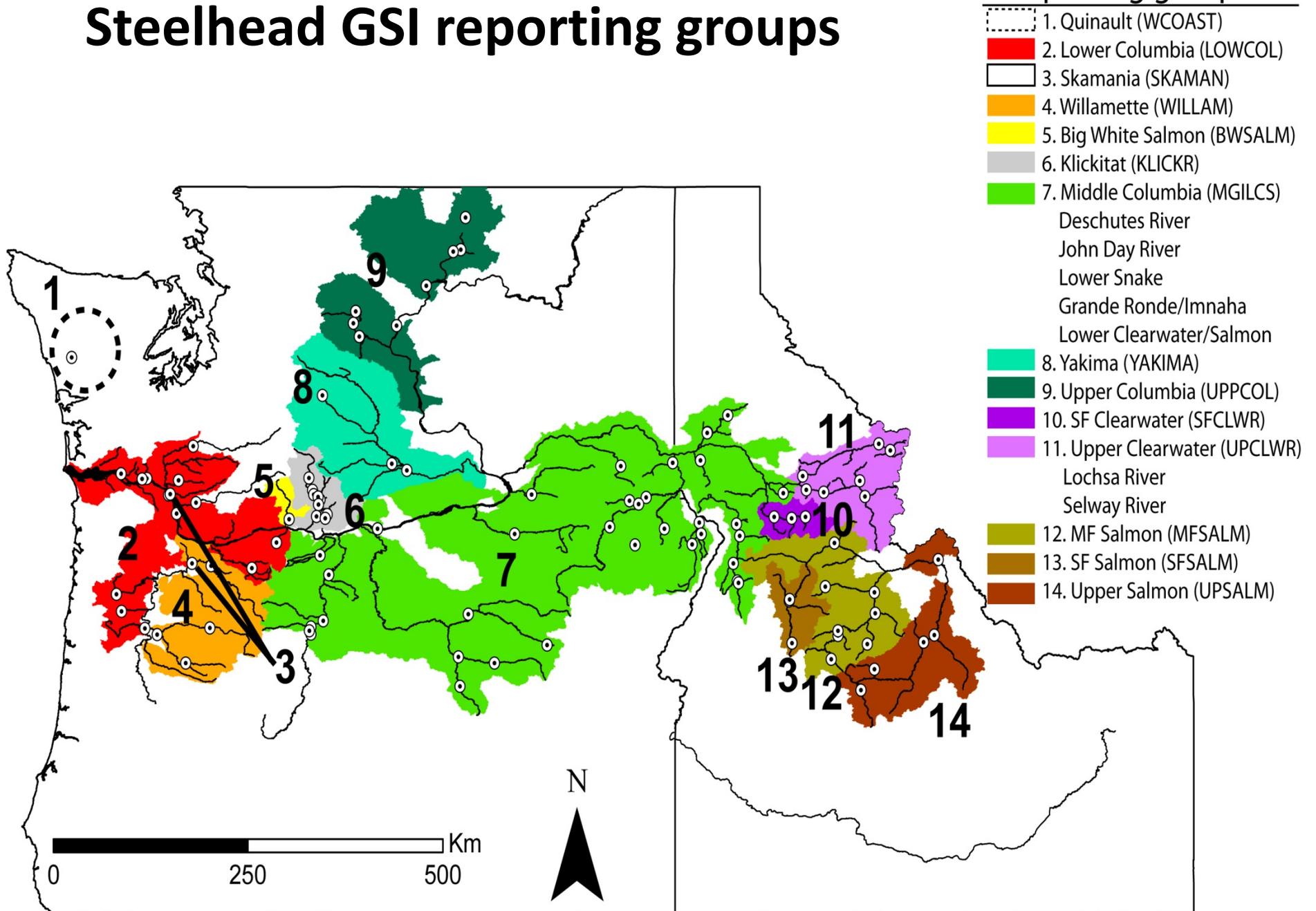
Tribal fishery in Zone 6

Tribal fisheries sampled

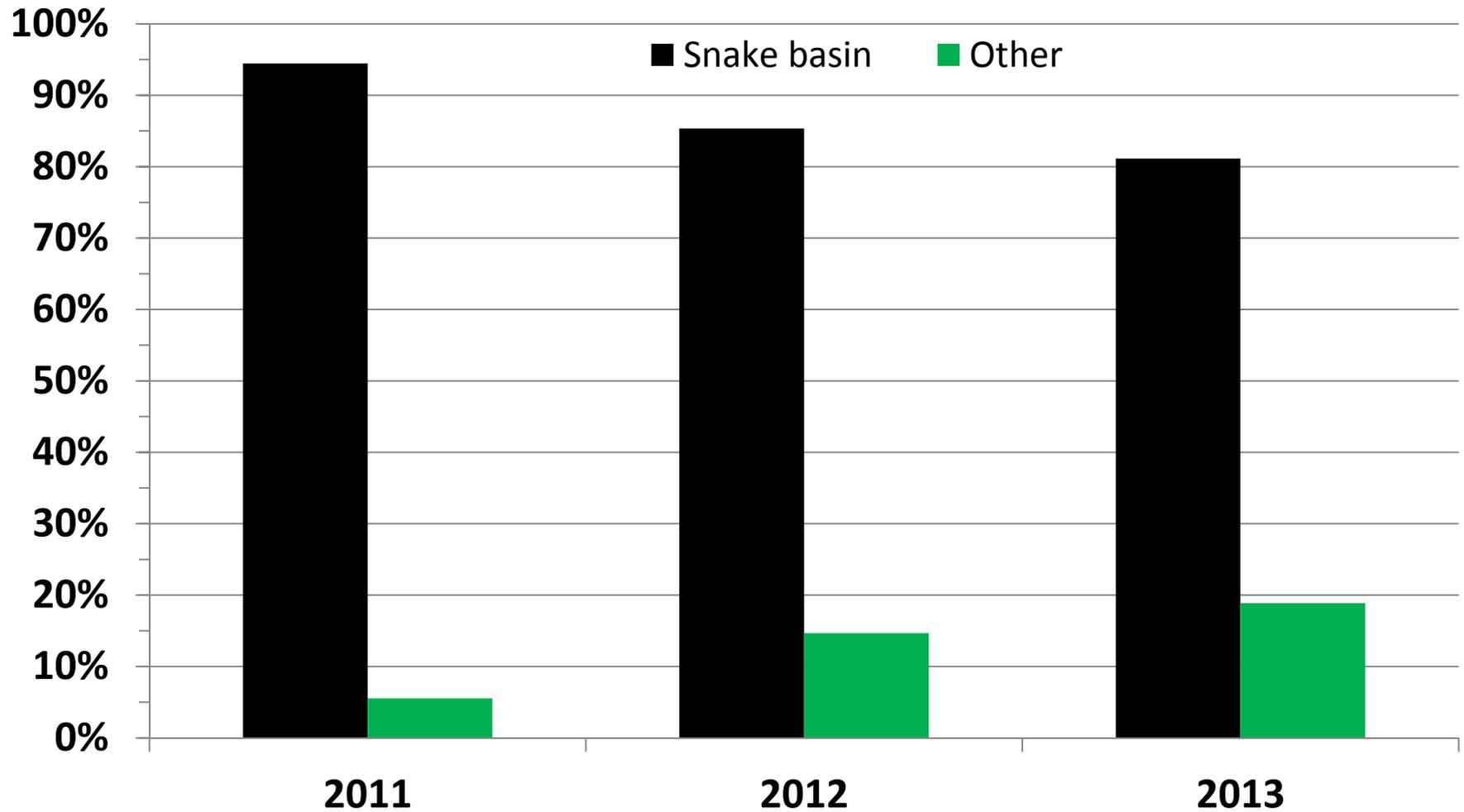
- **Columbia River Zone 6 : 2011 - 2014**
 - Bonneville Dam to McNary Dam
 - Clipped and unclipped fish are harvested
 - Platform, hoop net, hook and line, gill net, drift net
 - Fish are kept for personal use, over-the-bank sales, and commercial sales
 - Commercial fishing targets summer and fall Chinook, sockeye, and Coho but significant numbers of Steelhead are caught especially in the fall Chinook fishery.
 - Commercial retention and sale of Steelhead is allowed
 - Most of the Steelhead harvest occurs during the fall commercial season (late August – early October)
 - Harvest is estimated for clipped and unclipped Steelhead
 - catch was sampled by WDFW in 2011 at commercial buyers
 - catch has been sampled by Yakama Nation since 2012

Steelhead GSI reporting groups

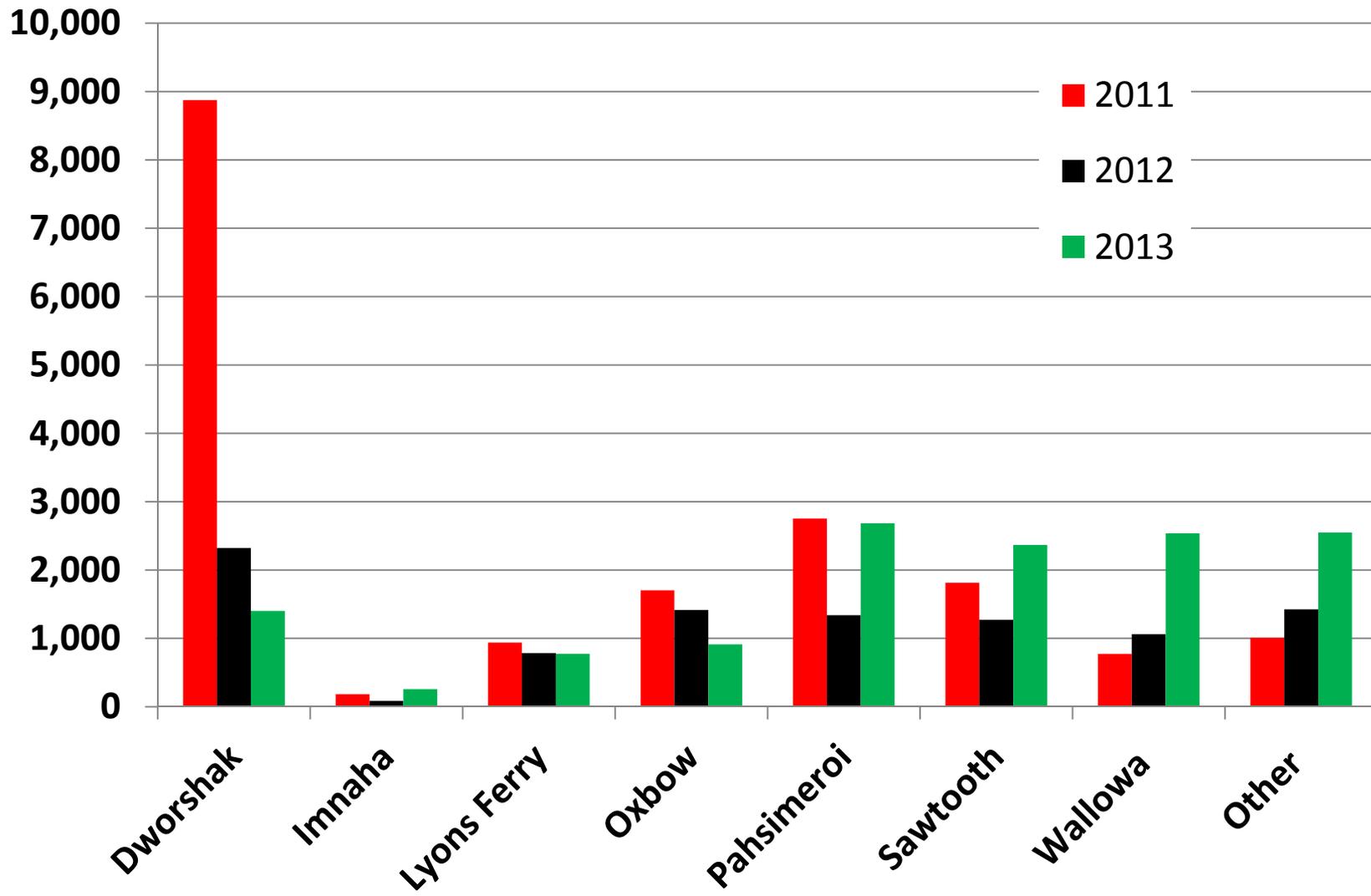
Reporting groups



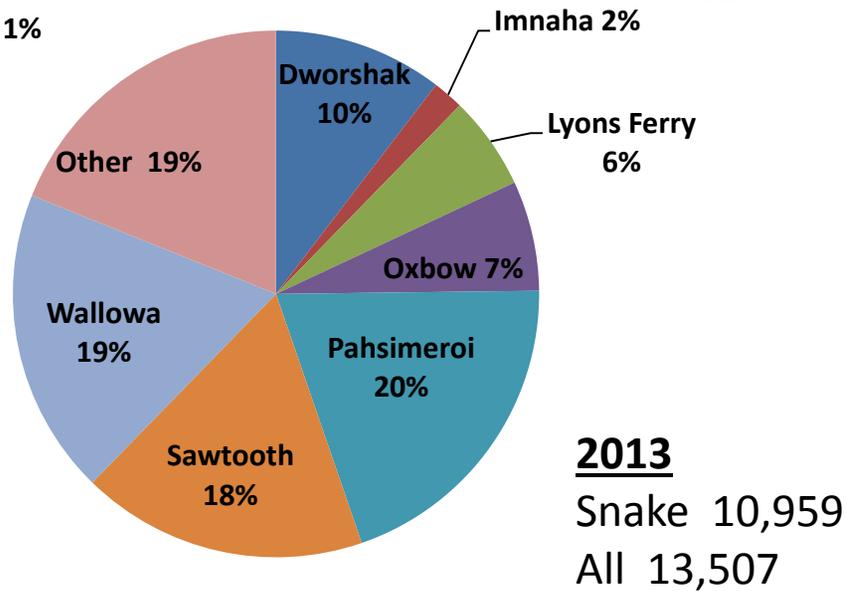
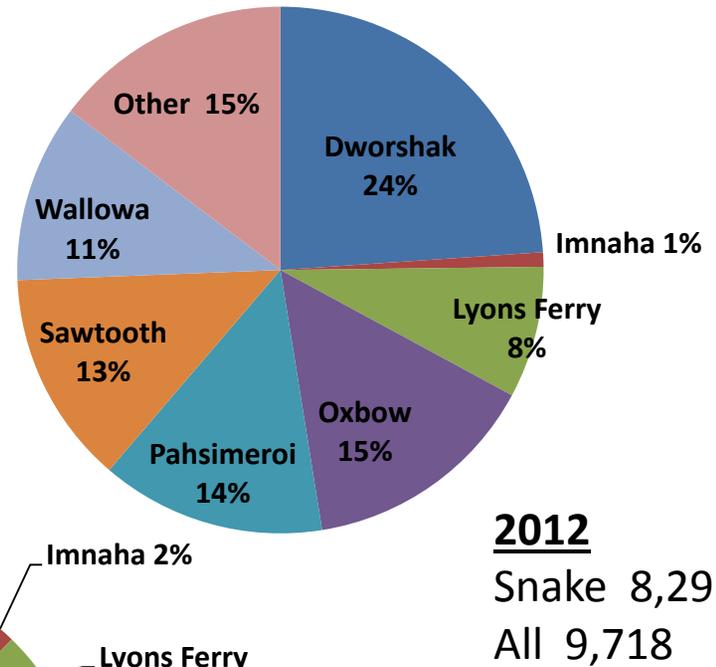
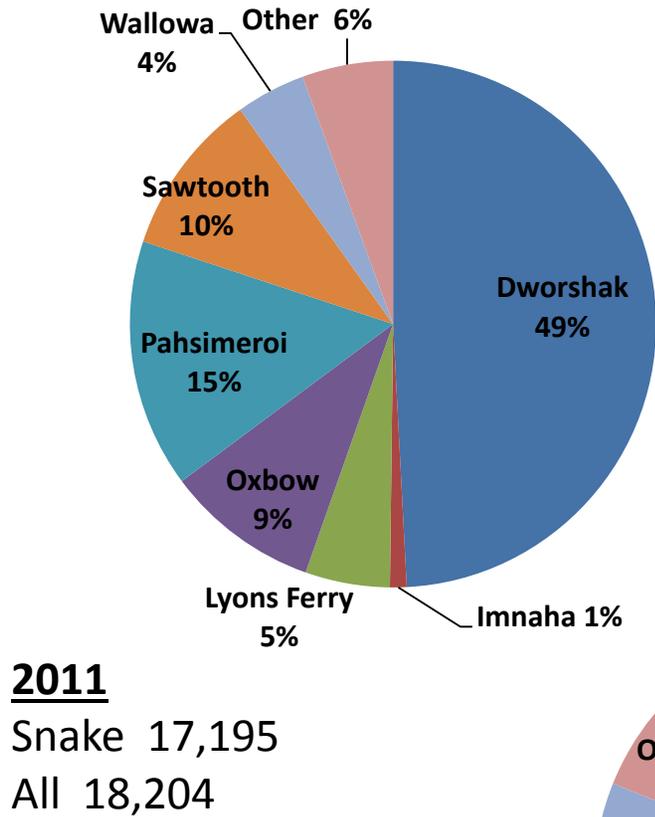
Snake River basin hatchery contribution in the tribal Zone 6 clipped Steelhead harvest



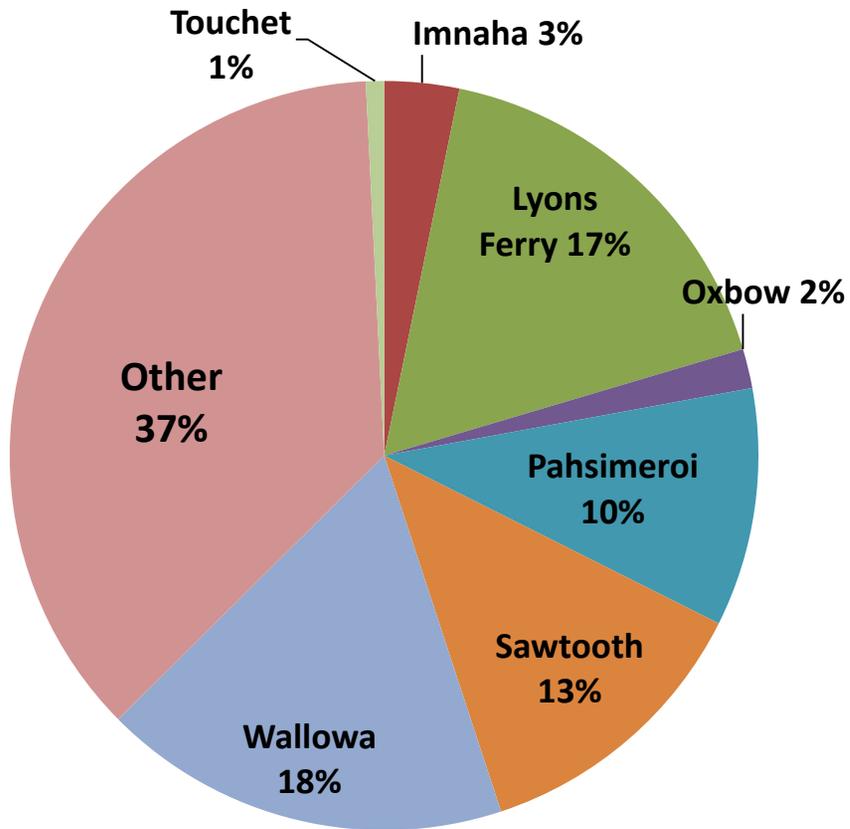
Snake River basin hatchery stocks in Tribal Zone 6 fishery– Clipped Steelhead harvest



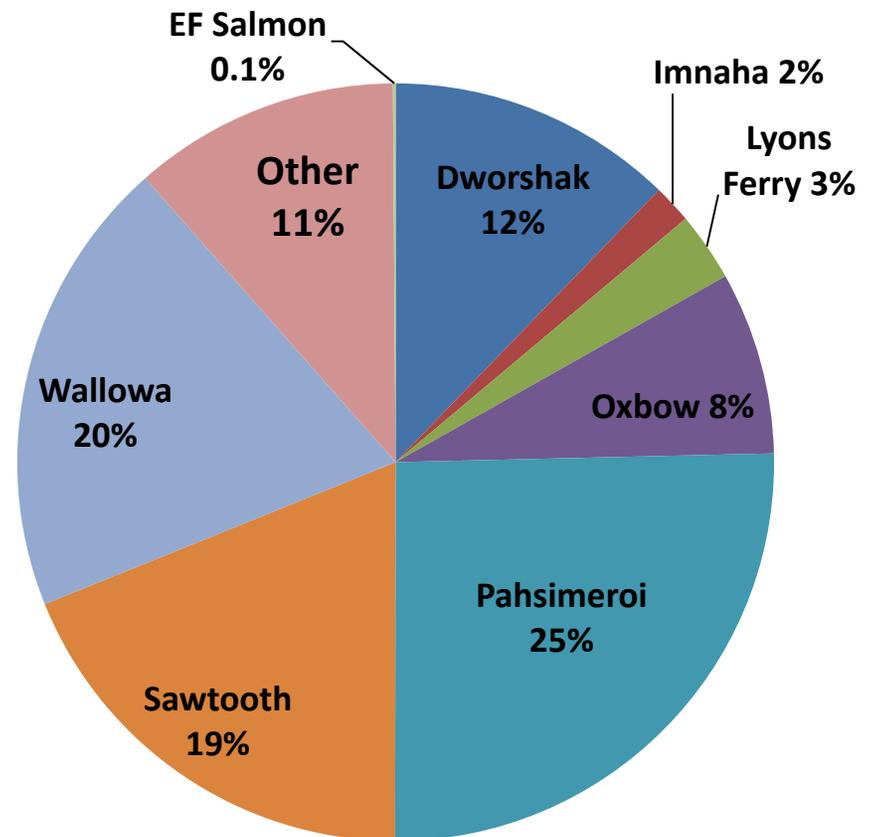
Zone 6 tribal clipped Steelhead stock composition



Tribal Zone 6 Clipped Steelhead stock composition 2013

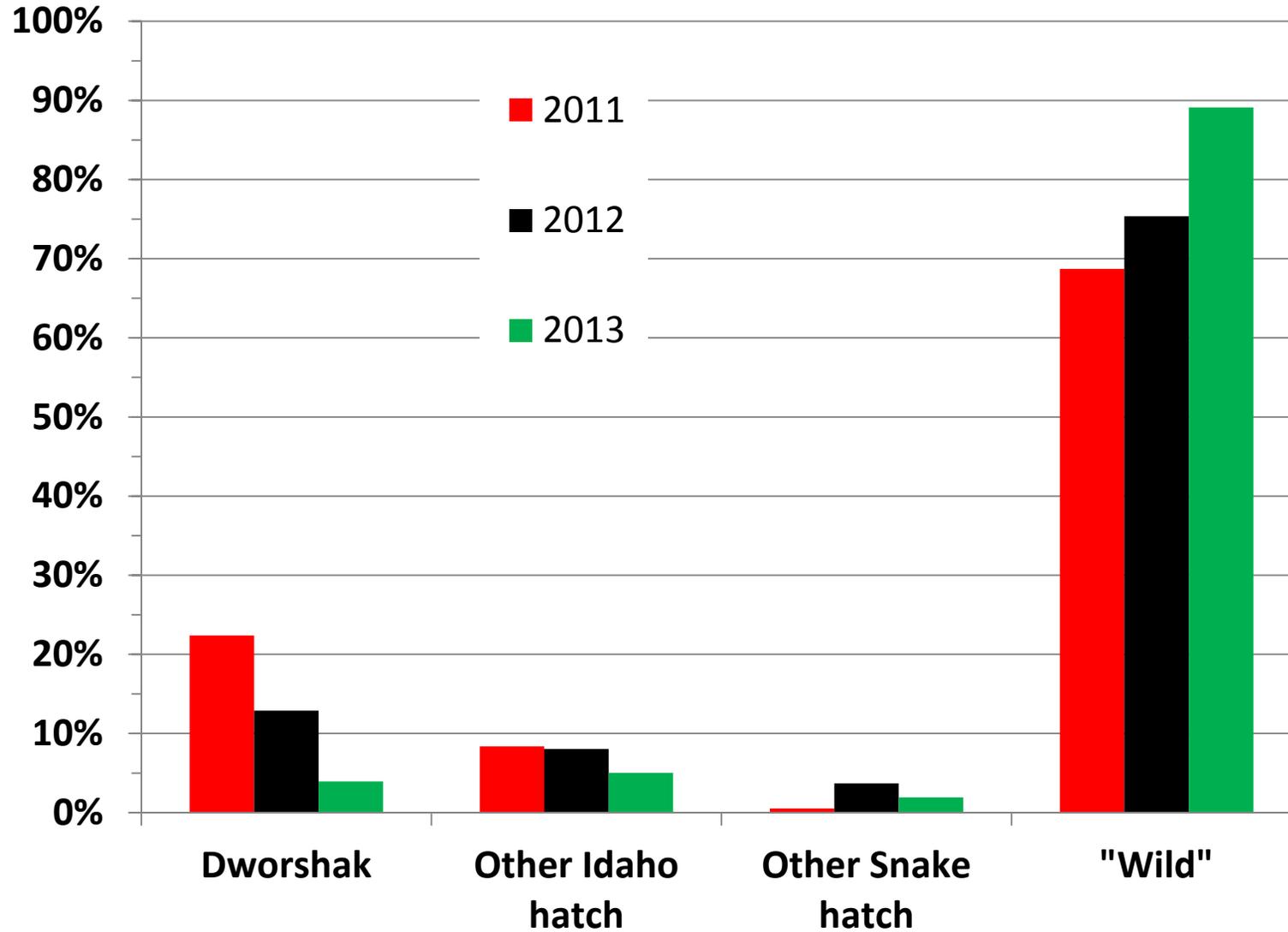


June 16 – July 31
Harvest = 3,061

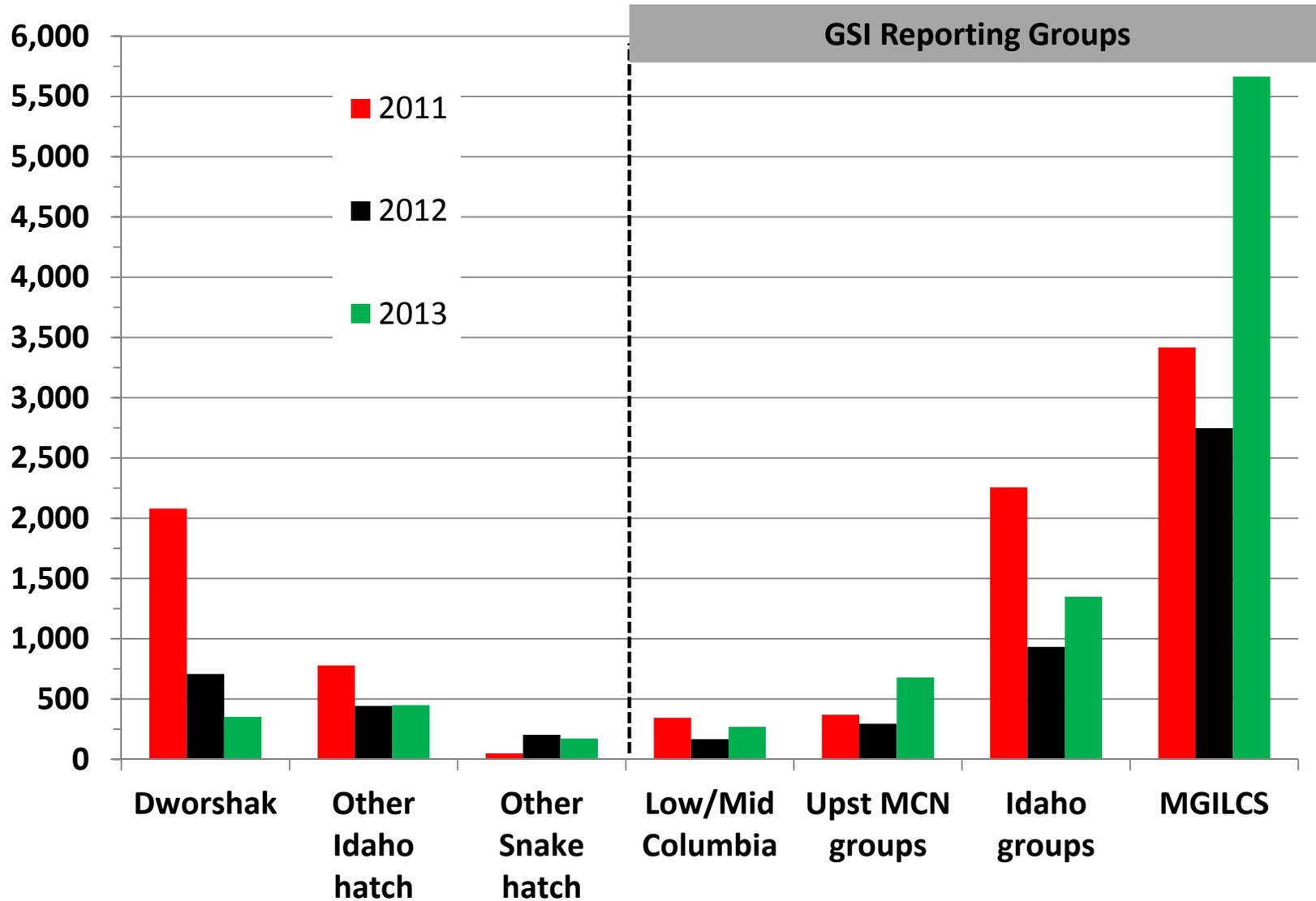


August 1 – October 9
Harvest = 10,447

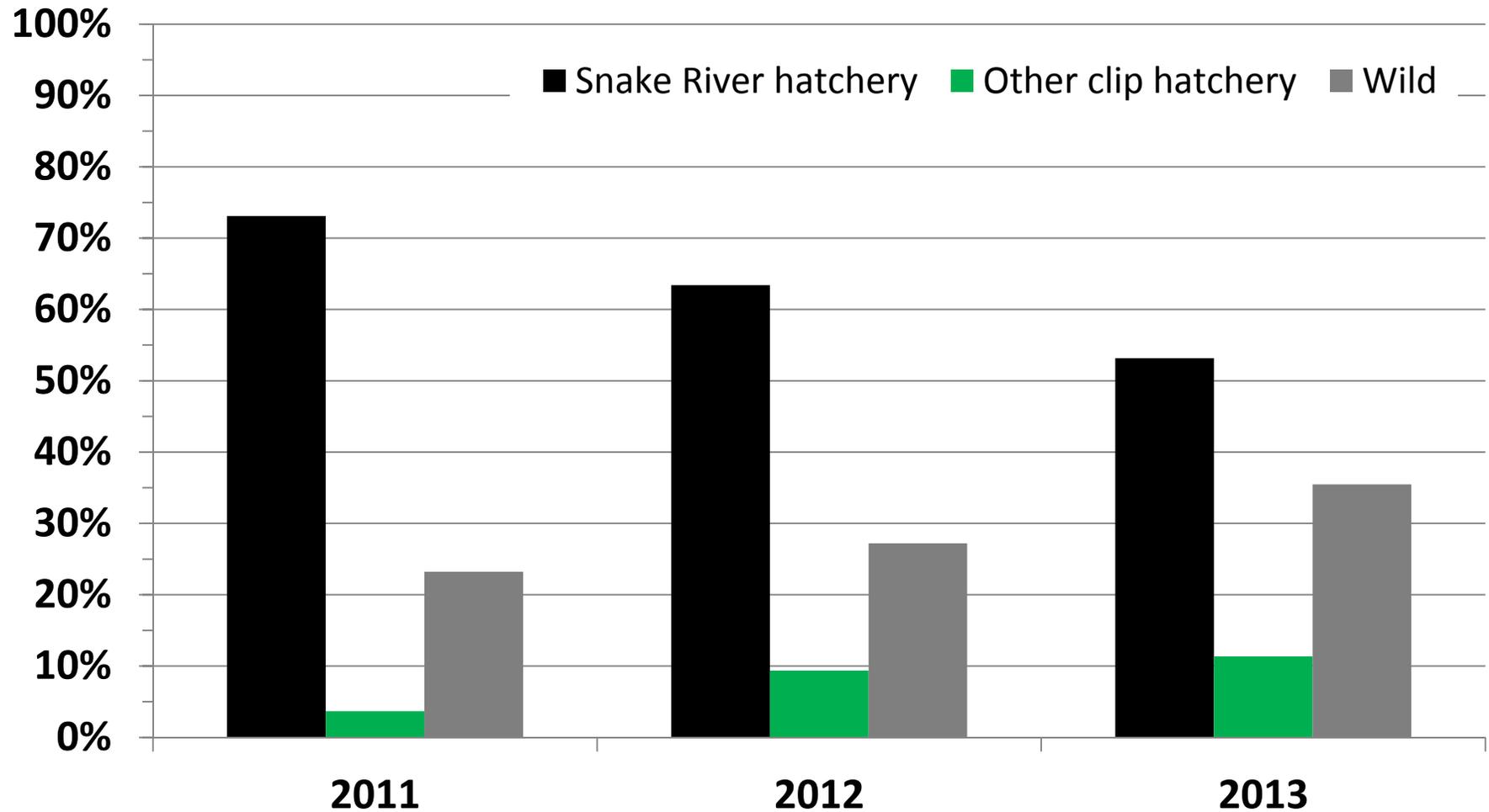
Tribal Zone 6 unclipped Steelhead stock composition



Tribal Zone 6 unclipped Steelhead stock composition

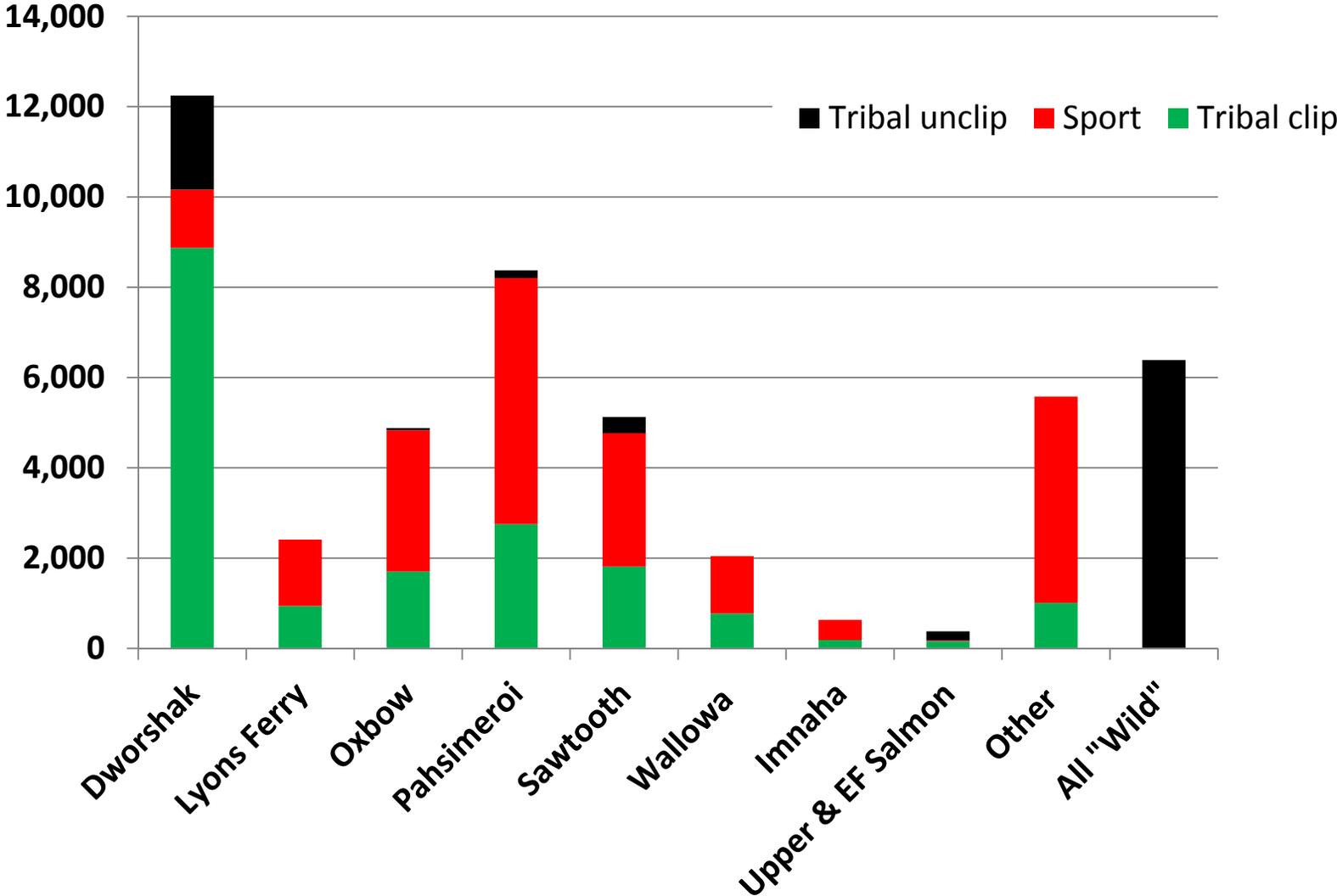


Snake River basin hatchery (clip and unclipped) contribution in the tribal Zone 6 total Steelhead harvest



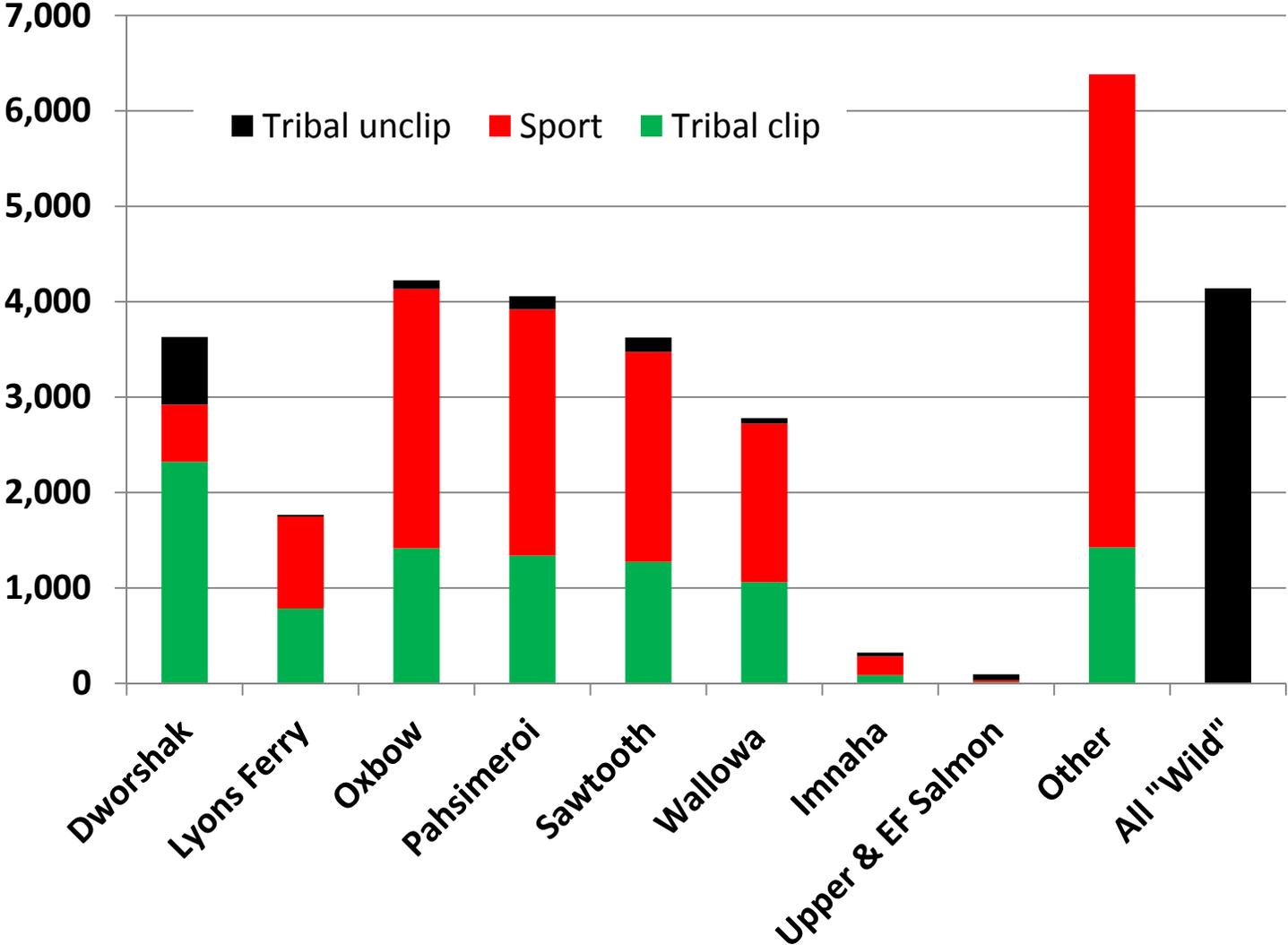
Columbia River summer Steelhead harvest

2011 Total harvest = 45,193; Snake hatchery = 33,228



Columbia River summer Steelhead harvest

2012 Total harvest = 29,759; Snake hatchery = 19,236



Columbia River summer Steelhead harvest

2013 Total harvest = 32,655; Snake hatchery = 18,276

